FIG. 1

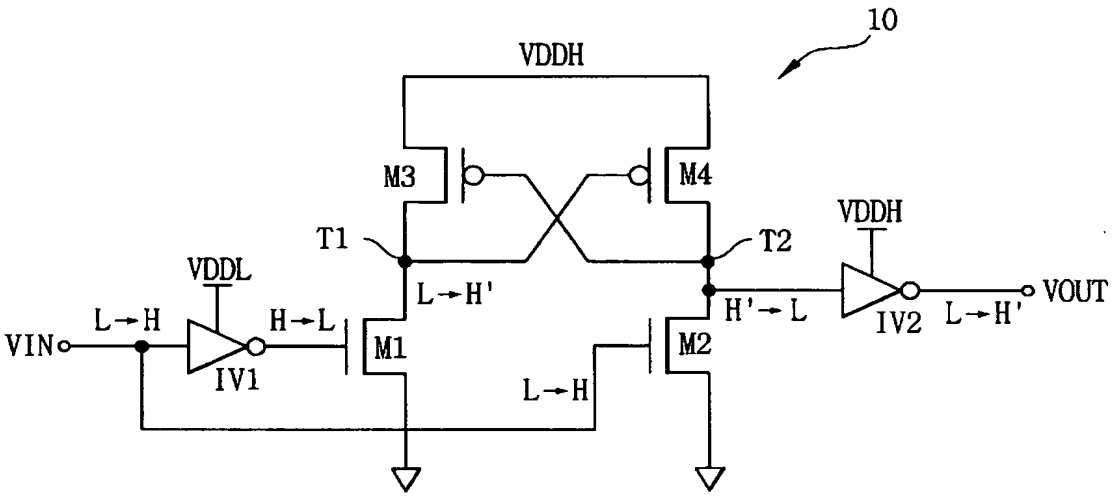

10
VDDH
M3
M4
T1
T2
VDDH
VDDL
L→H'
H'→L
VOUT
L→H
H→L
VIN
M1
M2
IV2
L→H'
IV1
L→H

FIG. 2

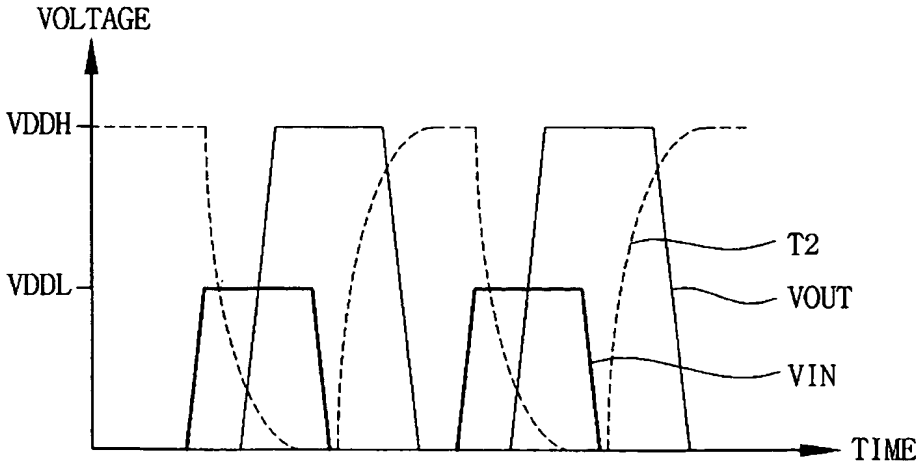

VOLTAGE
VDDH
VDDL
T2
VOUT
VIN
TIME

FIG. 3
(PRIOR ART)

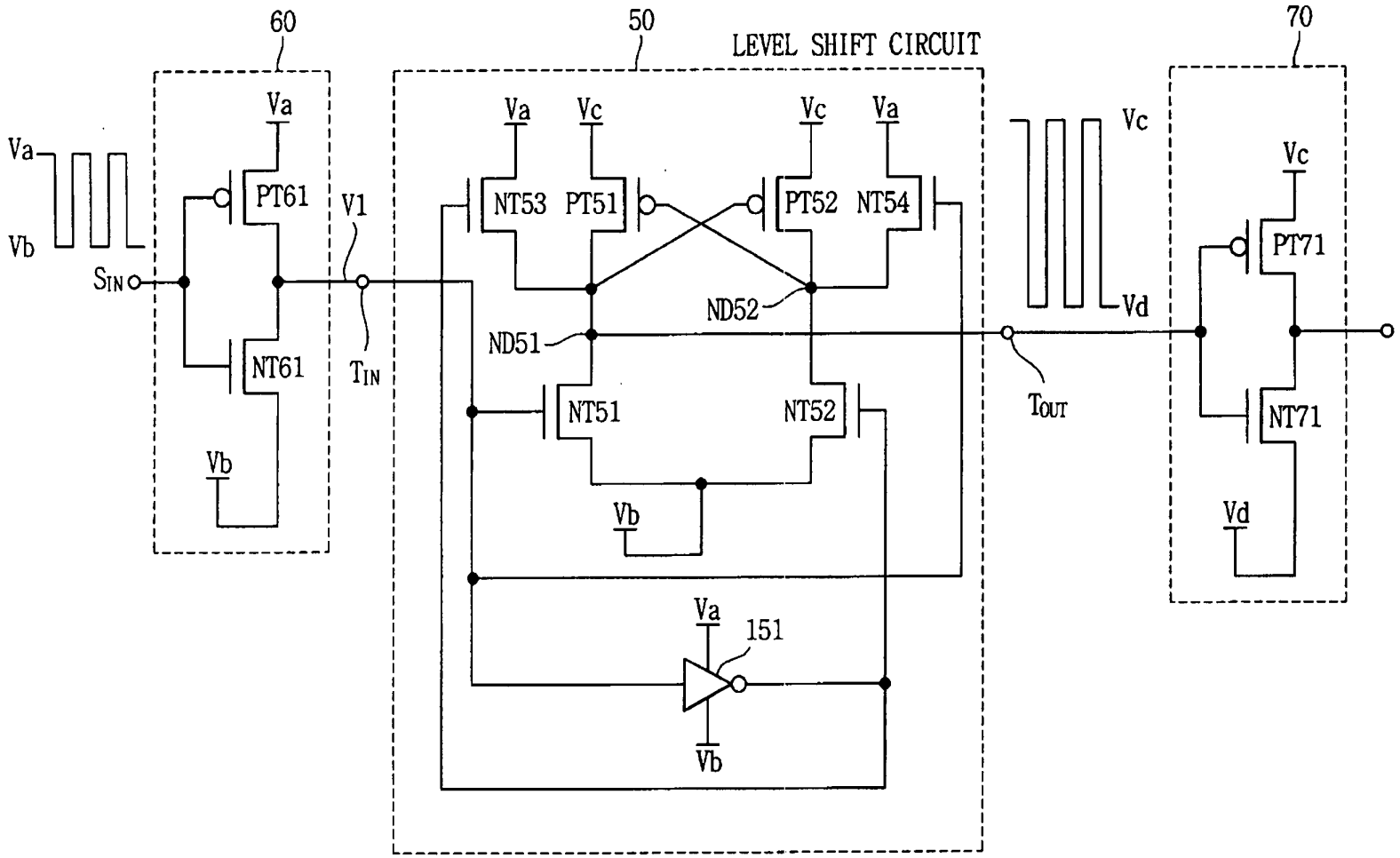


FIG. 4

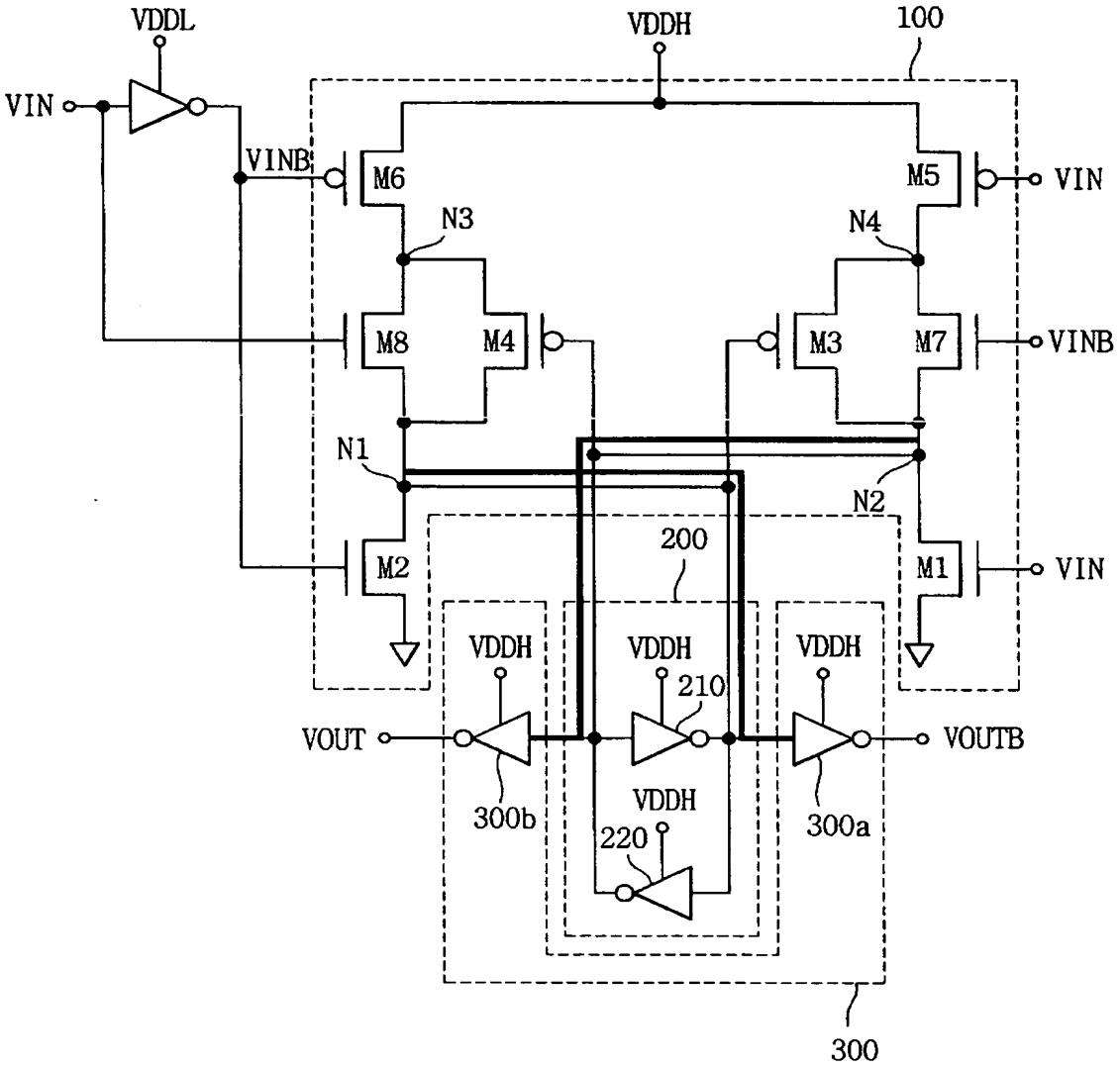

VDDL
VDDH
100
VIN
VINB
M6
M5
VIN
N3
N4
M8
M4
M3
M7
VINB
N1
N2
200
M2
M1
VIN
VDDH
VDDH
VDDH
210
VOUT
VOUTB
300b
VDDH
220
300a
300

FIG. 5A

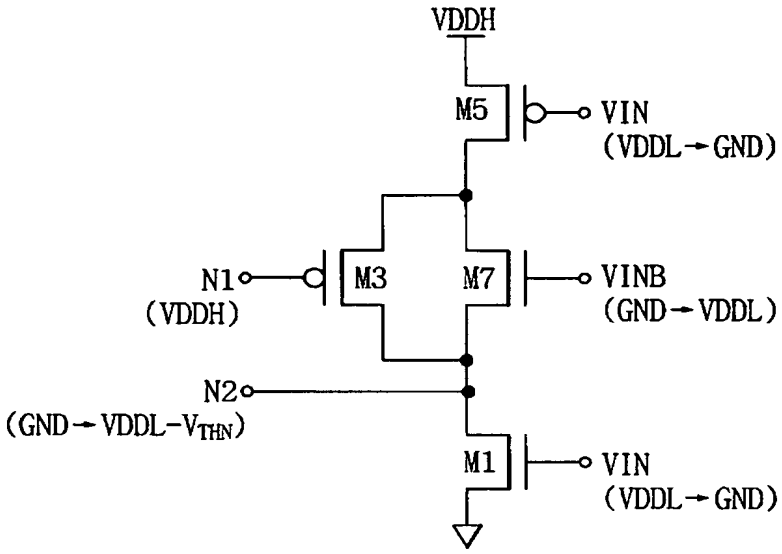

VDDH
M5
VIN
(VDDL→GND)
N1
(VDDH)
M3
M7
VINB
(GND→VDDL)
N2
(GND→VDDL-V_{THN})
M1
VIN
(VDDL→GND)

FIG. 5B

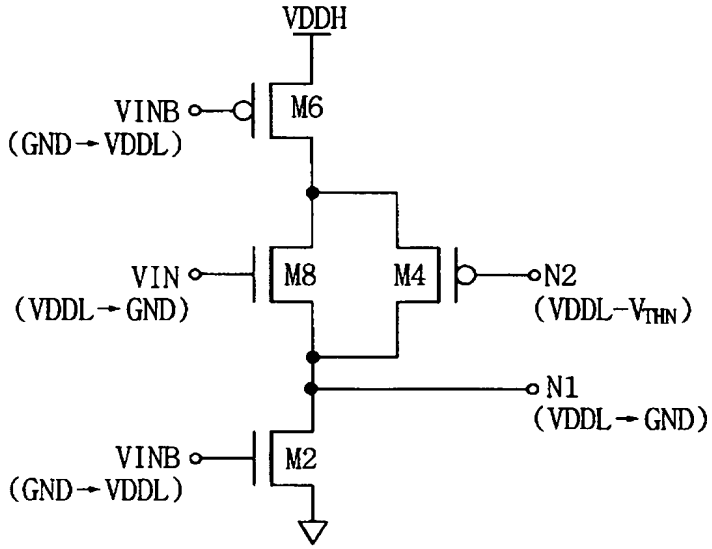

VDDH
VINB
(GND→VDDL)
M6
VIN
(VDDL→GND)
M8
M4
N2
(VDDL-V_{THN})
N1
(VDDL→GND)
VINB
(GND→VDDL)
M2

FIG. 5C

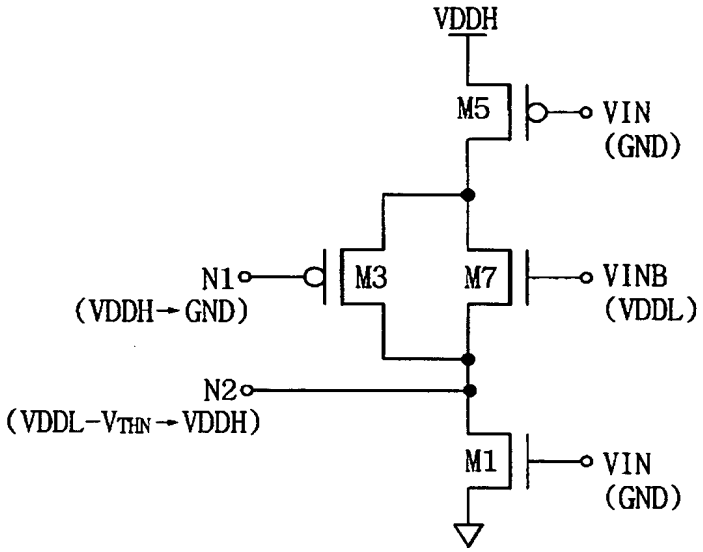

VDDH
M5
VIN
(GND)
N1
(VDDH→GND)
M3
M7
VINB
(VDDL)
N2
(VDDL-VTHN→VDDH)
M1
VIN
(GND)

FIG. 5D

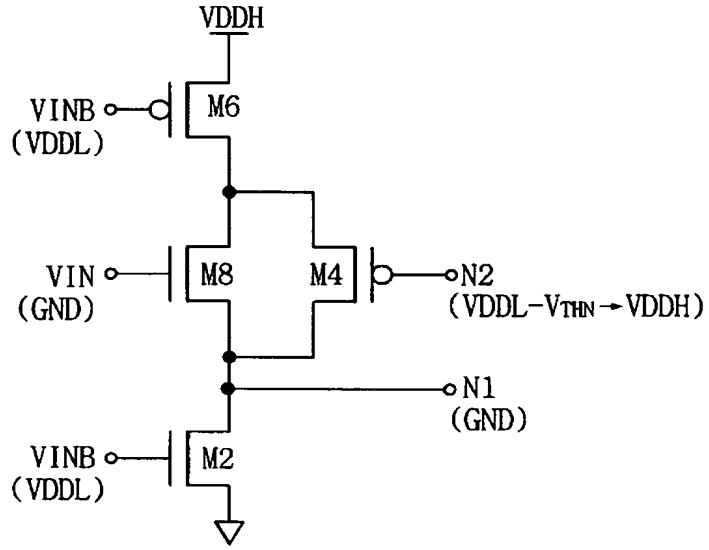

VDDH
VINB
(VDDL)
M6
VIN
(GND)
M8
M4
N2
(VDDL-VTHN→VDDH)
N1
(GND)
VINB
(VDDL)
M2

FIG. 6A

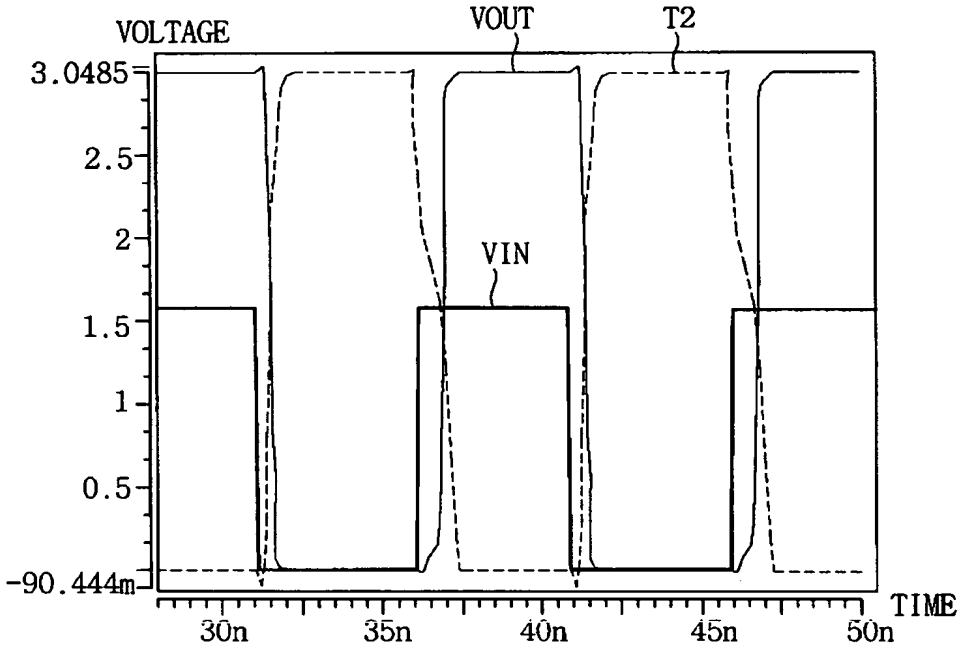

VOLTAGE
VOUT
T2
3.0485
2.5
2
VIN
1.5
1
0.5
-90.444m
TIME
30n
35n
40n
45n
50n

FIG. 6B

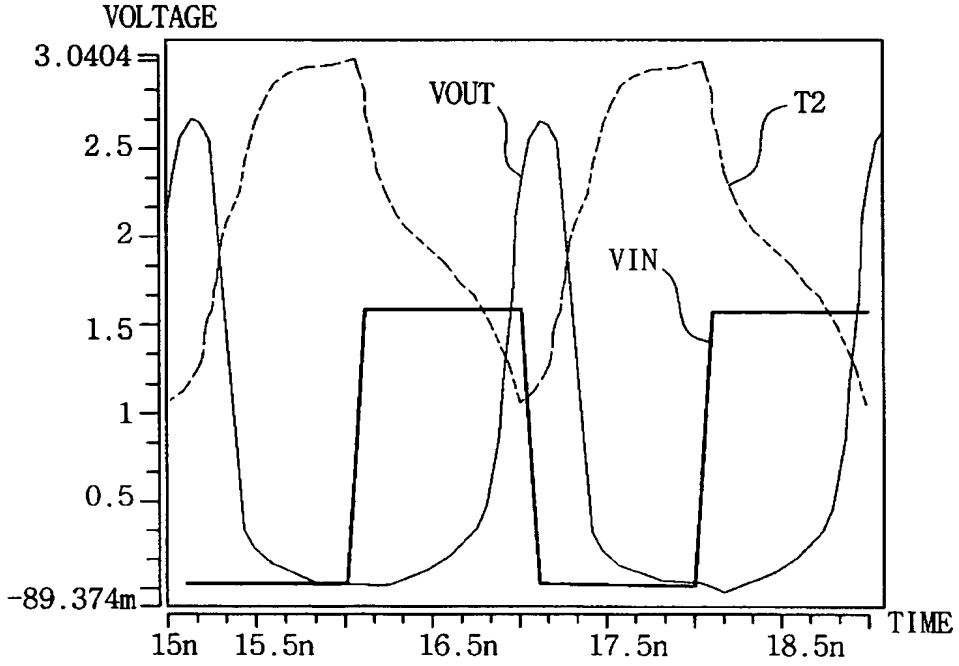

VOLTAGE
3.0404
VOUT
T2
2.5
2
VIN
1.5
1
0.5
-89.374m
TIME
15n
15.5n
16.5n
17.5n
18.5n

FIG. 6C

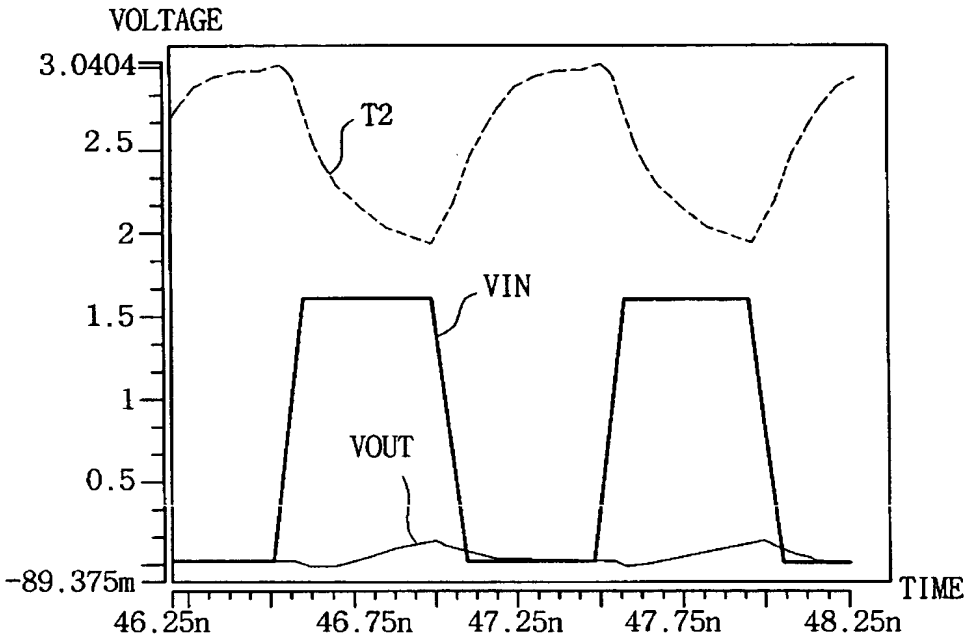

VOLTAGE
3.0404
2.5
2
1.5
1
0.5
-89.375m
T2
VIN
VOUT
TIME
46.25n
46.75n
47.25n
47.75n
48.25n

FIG. 7A

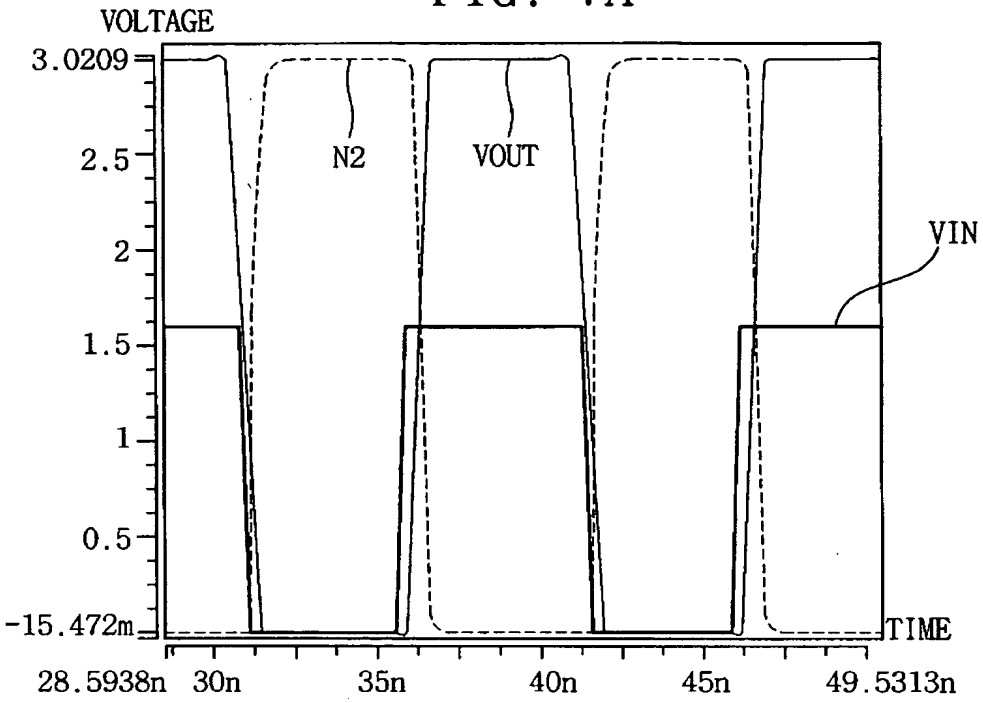

VOLTAGE
3.0209
2.5
2
1.5
1
0.5
-15.472m
N2
VOUT
VIN
TIME
28.5938n
30n
35n
40n
45n
49.5313n

FIG. 7B

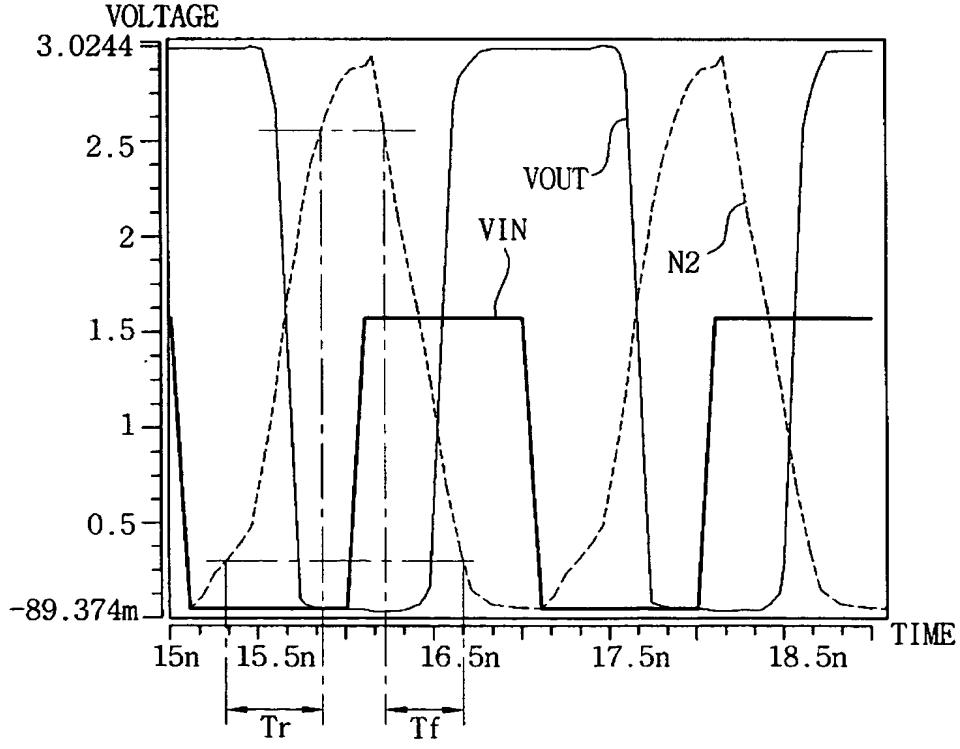

VOLTAGE
3.0244
2.5
2
1.5
1
0.5
-89.374m
VOUT
VIN
N2
TIME
15n
15.5n
16.5n
17.5n
18.5n
Tr
Tf

FIG. 7C

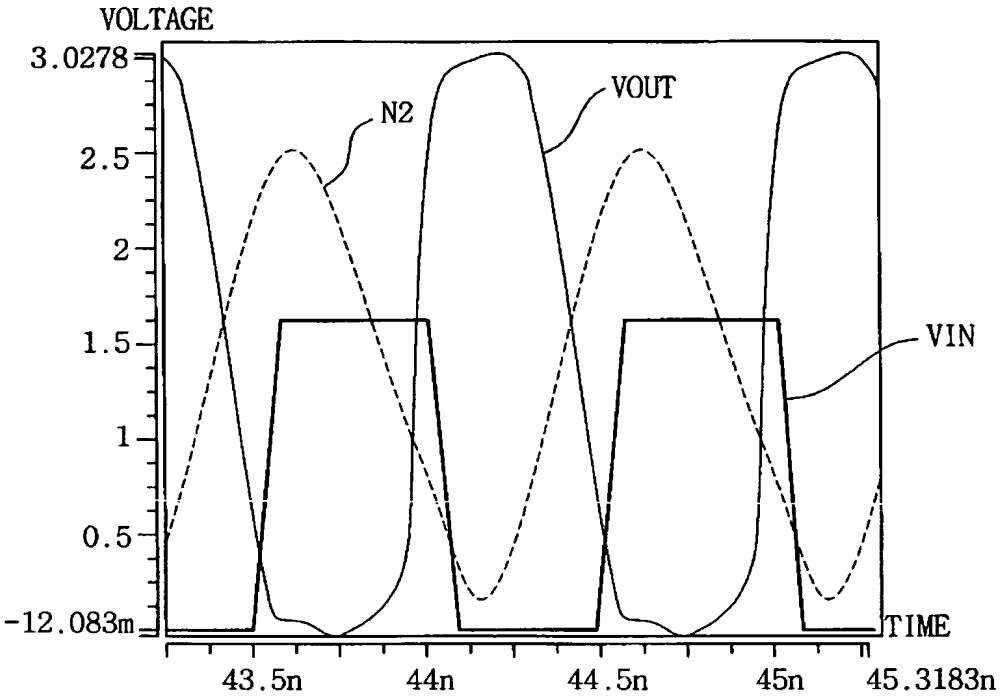

VOLTAGE
3.0278
2.5
2
1.5
1
0.5
-12.083m
N2
VOUT
VIN
TIME
43.5n
44n
44.5n
45n
45.3183n

FIG. 8

		10MHz	100MHz	500MHz	1GHz
CONVENTIONAL STRUCTURE	SWING RANGE	100%	100%	89%	4%
	DUTY RATIO	49.5:50.5	46.5:53.5	18.3:81.7	-
	CURRENT (VDDH)	10uA	85uA	380uA	250uA
PRESENT INVENTION	SWING RANGE	100%	100%	100%	100%
	DUTY RATIO	49.9:50.1	49.0:51.0	48.5:52.0	51.2:48.8
	CURRENT (VDDH)	16UA	174uA	737uA	1089uA

FIG. 9

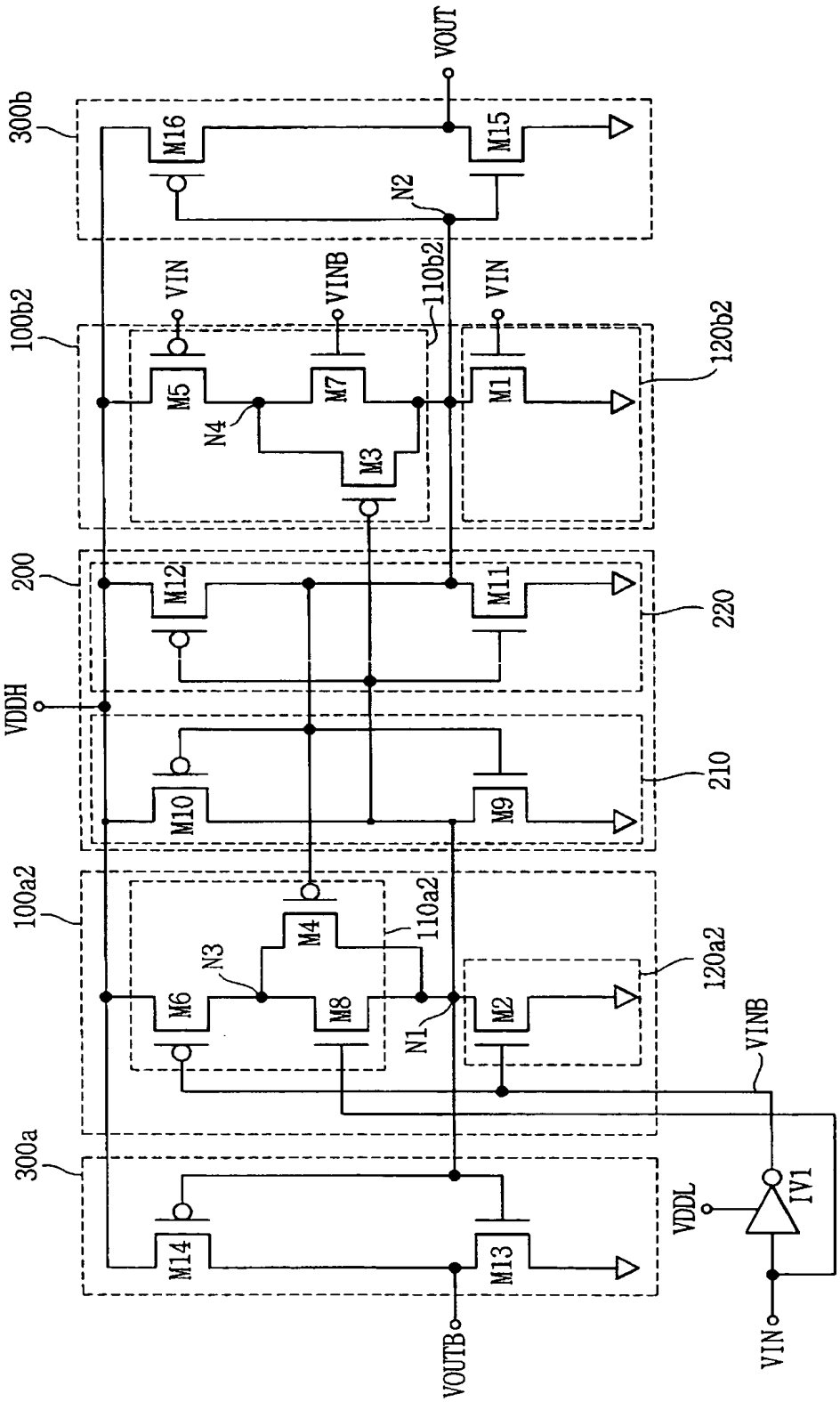
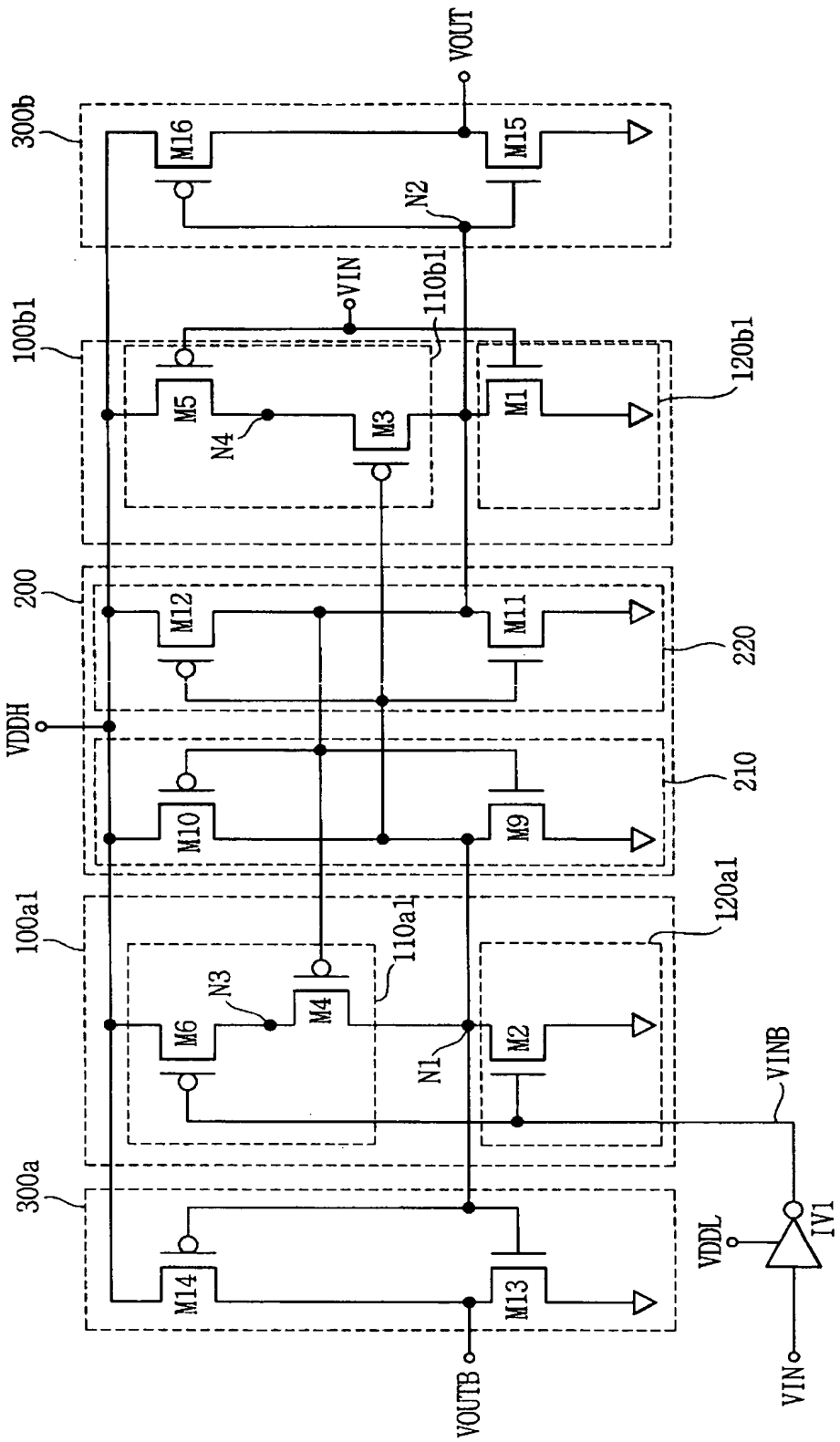

VOUT
300b
M16
M15
N2
VIN
VINB
110b2
VIN
100b2
M5
M7
M1
120b2
N4
M3
200
M12
M11
220
VDDH
M10
M9
210
100a2
M4
110a2
N3
M6
M8
M2
120a2
N1
VINB
300a
M14
M13
VDDL
IV1
VOUTB
VIN

FIG. 10


VOUT
300b
M16
M15
N2
VIN
110b1
100b1
M5
N4
M3
M1
120b1
200
M12
M11
220
VDDH
M10
M9
210
100a1
120a1
110a1
N3
M6
M4
N1
M2
VINB
300a
M14
M13
VDDL
IV1
VOUTB
VIN